

Bureau Veritas  
**Oil & Petrochemicals**

Global Leaders in Testing & Inspection



# Bureau Veritas Oil & Petrochemicals Company Overview



With origins dating back over 150 years, Inspectorate, a Bureau Veritas Group Company, has built, and continues to maintain an outstanding reputation for independence and technical excellence within the oil, gas and petrochemical industries.

Bureau Veritas' extensive network of state-of-the-art laboratories and expert inspectors and technicians provides reliable quality and quantity determination services, with local and global industry knowledge.

Our laboratories are able to support clients requiring third party analytical services within the Oil & Petrochemicals market or who are looking to outsource their Quality Control requirements. We operate under the most stringent quality and HSE controls and hold accreditations including ISO 9001, ISO 14001 and ISO 17025.

Bureau Veritas is represented on:

- American Petroleum Institute (API)
- American Standard Testing Methods (ASTM)
- Energy Institute (EI)
- European Committee for Standardization (CEN)
- Federation of Oils, Seeds and Fats Associations (FOSFA)
- International Air Transport Association (IATA)
- International Council of Machinery Lubrication (ICML)
- International Federation of Inspection Agencies (IFIA)
- International Methanol Producers and Consumers Association (IMPCA)
- Netherlands Oils, Fats and Oilseeds Trade Association (NOFOTA)
- Society of Port Engineers (SPE)
- Society of Tribologists & Lubrication Engineers (STLE)



# OIL & PETROCHEMICALS

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# Products Tested & Inspected



## OIL & PETROCHEMICALS

### Crude Oil

Bureau Veritas delivers a variety of customised crude oil testing services which add significant value to your business by utilizing our network of professional technicians, state-of-the-art laboratories, and the latest in testing technology. Bureau Veritas conforms to industry standards and employs innovative quality techniques to ensure decisions are based on reliable and accurate data. Assays are uniquely tailored for each client and can be reported in a variety of custom electronic formats enabling integration into software systems and refinery Linear Program (LP) models.

The expert services of Bureau Veritas help reduce risk, both commercial and reputational. Our services are unrivalled in the areas of quality and safety as we strive to help our customers improve their operations, diligently, economically and safely.



### Key Capabilities

- Analyzing and Classifying Crude Oil by Rail
- Cargo Inspection & Blending
- Cargo Treatment / Petroleum Additives
- Chemical Composition Analysis
- Corrosion Testing in Crude Oil Railcar Tanks
- Crude Oil and Gas Analysis for Hydrocarbon Accounting
- Crude Oil and Petroleum Feedstocks Tests
- Crude Oil Assay
- Crude Oil by Rail DOT Classification Testing
- Crude Oil Rail Car Services
- Crude Oil Testing
- Elemental Trace Analysis
- Flash Point Testing
- Mercury in Crude Measurement
- Metering & Calibration
- Quick Yield Program - Fast Assay Services
- Shale Gas Analysis



## OIL & PETROCHEMICALS

### Diesel Fuel & Gasoil

Diesel fuel has to meet stringent quality standards such as EN590 and ICE Low Sulfur. Bureau Veritas is a world leader in diesel fuel testing and inspection, providing services to national and international standards. Throughout Bureau Veritas' network of laboratories, our analytical chemists provide rapid turnaround of results and fully independent reporting.

Our specialist laboratories around the world are both internally and externally verified to ensure you receive the most accurate results. In addition, our experts monitor the effectiveness of additives and offer bespoke testing programmes.



### Key Capabilities

- Analytical Testing Services According to International Standards (e.g. ASTM, EN-ISO, IP, DIN)
- Biodiesel Testing
- Cargo Inspection & Blending
- Cargo Treatment / Petroleum Additives
- Engine Exhaust Emissions
- Flash Point Testing
- Loss Control
- Metering & Calibration
- Pipeline Contamination Testing
- Quantity and Quality Inspections
- Sampling
- Ship and Shore Attendance
- Technical Advice
- Ultra Low Sulfur Diesel



## OIL & PETROCHEMICALS

### Gases

Bureau Veritas' field staff and chemists provide independent inspection and testing at all major hubs around the world. Specialist knowledge of the Liquefied Petroleum Gas (LPG) and Liquefied Natural Gas (LNG) industry has been built through many years experience.

We also offer inspection and testing services for a range of organic and chemical gases.

Our suite of gas analysis packages provides assurance for your product whilst complying with industrial standards, including ASTM and IP. Our locations have a wealth of experience and are fully equipped for testing propane, butane and ethane products for export and EPA specifications. We can comply with the need for unique LPG testing capabilities required specific to the origin of the gas products.



### Key Capabilities

- Analytical Testing Services According to International Standards
- Bespoke Customer Specific Methods
- Emissions Testing
- Full Specification Testing
- Liquid Storage Terminal Services
- LNG / LPG Services
- Loss Control
- Metering & Calibration
- Pipeline Contamination Testing
- Quantity and Quality Inspections
- Sampling
- Ship and Shore Attendance
- Technical Advice



## OIL & PETROCHEMICALS

### Gasoline & Components

Bureau Veritas offers complete gasoline testing packages throughout our global network of laboratories. Dedicated fuel laboratories are capable of testing to recognised standards such as ASTM and IP. Meeting the EN 228 specification or producing an E85 ethanol blend, our laboratories have the expertise to analyse light distillates on your behalf.

Quality control of fuels is essential and Bureau Veritas has the analytical capabilities and expertise to perform this across the globe. We offer troubleshooting analysis for any gasoline blends plus full EN 228 specification analysis for gasoline. Bespoke testing packages can be run for high octane or racing fuels.

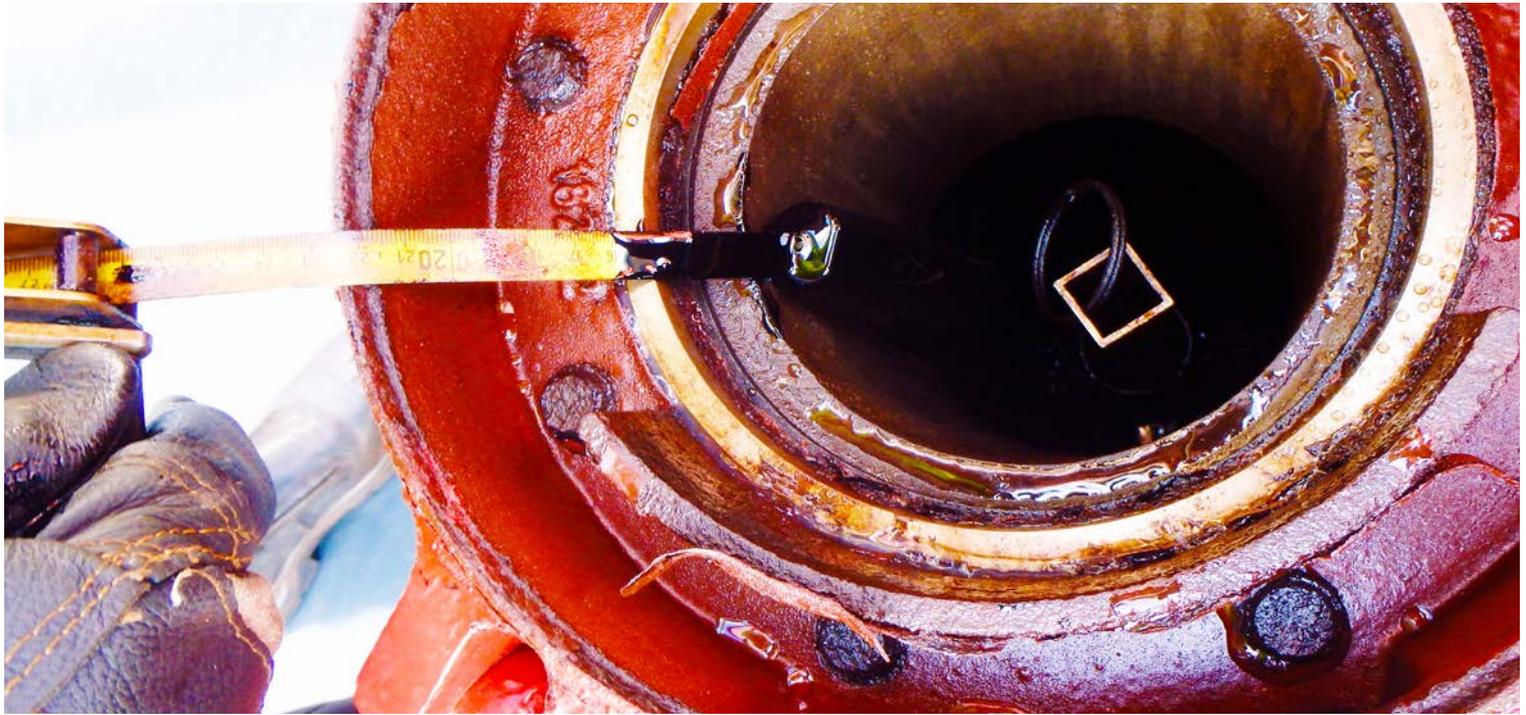
Gasoline and component blending requires specialists with an intimate knowledge of petroleum chemistry, interaction of the various components as well as ship loading system, terminal tankage, pumps and pipelines.

Bureau Veritas carries out blending operations on behalf of the world's major oil companies and independent traders on a daily basis around the world.



### Key Capabilities

- Analytical Testing Services According to International Standards
- Cargo Inspection & Blending
- Cargo Treatment / Petroleum Additives
- Composition by GC
- Flash Point Testing
- Loss Control
- Pipeline Contamination Testing
- Quantity and Quality Inspections
- Sampling
- Ship and Shore Attendance
- Technical Advice



## OIL & PETROCHEMICALS

### Heavy Fuel

Bureau Veritas provides fully integrated fuel inspection and testing services with laboratories and personnel located in key ports worldwide. We are available to perform quantity and quality surveys for heavy fuels; from barge to ship, pipeline to ship or road tanker to ship.

Our services include Bunker Quantity Surveys (BQS), supervision of drip sampling onboard receiving vessels, preparation of representative samples and pre-shipment bunker inspections. Our experienced chemists work to all industry standards ensuring your cargo is compliant with ISO 8217, Marpol Annex VI and SECA requirements.



### Key Capabilities

- Asphalt Testing
- Bunker Quantity Surveys (BQS)
- Cargo Inspection & Blending
- Cargo Treatment / Petroleum Additives
- Emissions Testing
- Fuel Oil Testing
- Full Specification Testing
- H<sub>2</sub>S in Bunker Fuels
- ISO 8217 – Marine Fuels
- Metering & Calibration
- On-Hire/Off-Hire Surveys
- Petroleum Cargo Inspection
- Sludge Survey
- Sulfur Content
- Supervision of Drip Sample
- Testing to International Standards
- VeriFuel - Marine Fuel Management Program



## OIL & PETROCHEMICALS

### Jet Fuel

Bureau Veritas offers a complete testing package for Aviation Fuel, Jet A1, to the latest version of DEFSTAN 91-91 issue 7 and the Aviation Fuels Quality Requirement for Jointly Operating Systems (AFQRJOS).

Our global network of laboratories also perform testing of aviation gases against stringent standards like ASTM D910 and DEFSTAN 91-90.

Bureau Veritas' analytical chemists provide rapid turnaround of results and fully independent reporting. Wherever possible we are accredited to ISO 17025 for the analysis of jet fuel.



### Key Capabilities

- Analytical Testing Services
- ASTM, EN-ISO and IP Fuel Test Methods
- Aviation Fuel Testing
- Bespoke Customer Specific Methods
- Cargo Inspection & Blending
- Cargo Treatment / Petroleum Additives
- Emissions Testing
- FAME in Jet Fuel
- Flash Point Testing
- Full Specification Testing
- Liquid Storage Terminal Services
- Loss Control
- Metering & Calibration
- Pipeline Contamination Testing
- Quantity and Quality Inspections
- Sampling
- Ship and Shore Attendance
- Technical Advice



# OIL & PETROCHEMICALS

## Petrochemicals

Bureau Veritas has an extensive knowledge of the vast range of petrochemical products and the related inspection, storage and laboratory testing requirements. Our highly trained inspection professionals are positioned at key locations and able to be rapidly mobilised to wherever cargoes are being loaded, unloaded or transferred.

In addition to the trading market we also support the operating plants by providing:

- R&D analytical services
- QA / QC services
- Subcontracting support
- Full laboratory outsourcing
- Sample transport

Over our many years in the business, we have accumulated comprehensive knowledge of and experience within this field and can thus offer you competent, efficient service within the inspection and testing of our core services.



### Key Capabilities

- Additives
- Amines
- Aromatics
- Carbonyls
- Cargo Inspection & Blending
- Cargo Treatment / Petroleum Additives
- Chemical Gases
- Chlorinated Hydrocarbons
- Drumming and Flexitanks
- Ethers
- Metering & Calibration
- Monomers
- Olefins
- Plasticizers
- Quality and Quantity Inspections
- Saturated Hydrocarbons
- Ship and Shore, Road / Rail / Isotainers
- Solvents
- Synthetic Oils and Fats

# Services Provided



## OIL & PETROCHEMICALS Cargo Inspection & Blending

Professional inspection services are critical whenever the custody of goods transfers between buyers, sellers and traders, especially for petroleum cargo. To assist with a seamless transition, Bureau Veritas has highly skilled professionals on the ground in all major transit and trading locations.

With the support of our comprehensive network of independent testing facilities we are able to offer certificates that are trusted for their integrity by all contractual parties, including financial institutions and insurance companies.

Bureau Veritas has extensive experience in blending petroleum products to meet client and international specifications, thereby adding significant value to their business. Gasoline and fuel oil blending require specialists with an intimate knowledge of petroleum chemistry, ship loading systems, terminal tankage, pumps and pipelines.



### Key Capabilities

- Analytical Testing Services
- Cargo Treatment / Petroleum Additives
- Due Diligence Inspections
- E.B.I.S Inspections
- Full Attendance Loading Master Services
- Global Sample Forwarding Services
- Loss Control - Terminals
- On-board Vessel Quantity Surveys (ROB)
- Quality and Quantity Inspections
- Road/Rail Tanker Inspection and Sealing
- Ship-to-Ship Transfers (STS)
- Stock Audits



## OIL & PETROCHEMICALS

### Cargo Treatment / Petroleum Additives

Bureau Veritas has built its reputation as a company that sets the standard for laboratory and inspection services around the world. We have maintained our trusted name and reputation by adhering to our quality management system and strictest safety standards, utilizing new technologies, and ensuring our professional staff are trained in all facets of the industry to meet and exceed customer's expectations.

When providing fuel additives, Bureau Veritas realizes exactly how critical meeting quality specifications are to our customers, whether it is on-shore, off-shore, or in-transit. Our mission is to provide operationally superior, cost-effective and timely treatment services worldwide.



#### Key Capabilities

- Analytical Testing Services
- Bench Blends
- Cargo treatment equipment in accordance with the standards of the major oil companies, terminals and shipping companies
- Chemical Composition Analysis
- In-Line Treatment
- In-Tank Treatment (Ship and Shore)
- Off-Shore/On-Shore Treatment
- On-board Vessel Quantity Surveys (ROB)
- Source and Supply Additives

#### Recommendation & Delivery Services

- Anti-oxidants
- Cetane and Octane Improvers
- CFPP Improvers
- Cloud Point Improvers
- Conductivity Improver (Stadis 450)
- Demulsifiers and Dehazers
- Dyes
- H<sub>2</sub>S Scavengers
- Lubricity Improvers
- Pour Point Improvers



## OIL & PETROCHEMICALS

### Environmental Testing

With the ever increasing focus on environmental issues, Bureau Veritas offers an extensive range of environmental testing to assist our customers in meeting the various industry and regulatory requirements and standards. Our capability extends to analysis of air quality, including industrial stack monitoring, and ground, waste, effluent, boiler and potable water quality. Bureau Veritas uses the most technologically advanced equipment in our laboratories enabling us to provide a quick, reliable and accurate analytical service.

All our customers rely on our certificate of analysis which gives them confidence that they are managing their business efficiently and in compliance with the regulations. Similarly, there are strict regulations in place for the industrial / processing companies to monitor their emissions to atmosphere. Bureau Veritas has the capability to sample those emissions using trained technicians and technologically advanced equipment, for example, to determine particulate concentration and VOC content.



### Key Capabilities

- Air Quality
- Bacteriology
- BOD/COD
- Chemical Analysis
- Chemical Gases
- Chlorinated and Non-Chlorinated Hydrocarbons
- Heavy Metals
- Pesticides
- Polychlorinated Biphenyls (PCB)
- Synthetic Oils and Fats
- Volatile & Non-volatile Organic Compounds
- Waste Water Quality
- Water Quality Tests



## OIL & PETROCHEMICALS Laboratory Subcontracting

Any company that has an in-house analytical laboratory has the option to outsource the running of the facility to a third party whose core business it is to manage and develop laboratories - thus lowering running costs and capital expenditure. Quality control may also be improved through the introduction of rigorous audit programs and using resources available within a larger network of laboratories, such as dedicated compliance and quality management.

In addition, outsourcing the laboratory can lead to more investment in new technology reducing turnaround times and lowering costs per-unit of analysis. Bureau Veritas has delivered numerous laboratory outsourcing projects around the world for global majors within the oil, mining and agriculture sectors.



### Key Capabilities

- Biofuels Services
- Cargo Treatment Services
- Crude Oil Testing
- Diesel Fuel Testing
- Equipment Maintenance Programme
- Experienced Management of Laboratory
- Jet Fuel Testing
- Implementation and Maintenance Of Quality System
- Laboratory Proficiency Testing
- LNG
- LPG
- Microbiological & Chemical Analysis
- Offshore Laboratory Equipment Calibration
- Oil and Lubricant Analysis
- Petrochemicals
- Routine and Non-Routine Analysis
- Shale Gas Analysis
- Technical Expertise
- Transformer Oil Testing



## OIL & PETROCHEMICALS

# Lubricants, Coolants & Oil Condition Monitoring

Oil analysis provides information for two important aspects, the condition of the oil being analyzed, and the condition of the equipment involved. By using the latest Oil Condition Monitoring (OCM) reporting software Bureau Veritas are able to conduct detailed statistical analysis. This will result in a detailed Diagnostic Report to be presented to the customer describing the condition of both the lubricant and equipment.

Bureau Veritas offers a range of analytical services from straightforward physical properties to more sophisticated methods including full ferrographic analysis. Our laboratories are ISO 17025 accredited and house the latest automated and multi-position analytical equipment.

One global reporting platform is offered, LOAMS<sup>SM</sup>, which will help our clients to manage their assets in a consistent manner, compare performance and track proactive and corrective actions. Our customer value comes in providing not just numbers, but meaning; bringing clarity to complexity, and providing recommendations that save you money.



### Key Capabilities

- Cloud Based Data Management Oil & Fluid Analysis
- Coolant Analysis
- Fuel Analysis
- Hydraulic Fluid Analysis
- New and Used Lubricants Testing
- Provide Informative Expert Maintenance Recommendations
- Refrigerants Testing
- Turbine Oil Analysis

**LOAMS**<sup>SM</sup>  
Lube Oil Analysis Management System



## OIL & PETROCHEMICALS

### Marine Fuel Services - VeriFuel

VeriFuel is a new Bureau Veritas testing program designed for today's marine industry which will set the future benchmark in marine fuel testing. Developed by a team of industry experts on both the user and vendor side of the submitted sample market, the program has been designed to meet the challenges faced by vessel operators in today's complex environment.

Bureau Veritas can provide Bunker Quantity Surveys around the globe by IFIA / Energy Institute (formerly IP) certified surveyors operating under a certified quality system. Our expertise and integrity assist in obtaining the right quantity of fuel, avoiding shortages and claims. This can be achieved with our pre-delivery (full or key) quality testing of the fuel which takes place while at the suppliers' premises.

VeriFuel will simplify preparation and shipment of samples, provide expert operational guidance and provide assessments with comprehensive fuel reports. VeriFuel also provides the latest web portal solutions for easy access to fuel reports, statistics and pertinent industry developments.



### Key Capabilities

- Full Scope Bunker Quantity Services
- Loss Control Investigations
- Onboard Crew Best Experience Bunker Training
- Onboard Vessel Quantity Surveys
- On/Off-Hire Bunker Surveys
- On-Shore Crewing Seminar Bunker Training
- VeriFuel - Marine Fuel Management Program

**VeriFuel**  
*Understanding Marine Fuel*



# OIL & PETROCHEMICALS

## Metering & Calibration Services

Bureau Veritas calibration services include meter proving, volume flow and related measurement and calibration services for the accurate measurement of refined petroleum products, chemicals and other liquids as per relative API standards.

Whether your facility has newly constructed tanks or tanks taken out of service for repairs and maintenance, our experienced field teams will meet or beat your scheduled calibration expectations.

Our technicians and facilities are safety driven and dedicated to accuracy. We offer quality workmanship, evident in our ability to provide custom tables and vessel information; strapping tables are customized to your specific incremental and capacity needs.

Bureau Veritas provides dependable liquid and gas meter services ranging from new installations, scheduled maintenance, calibration, repairs and part sales to analysis and allocation services.



### Key Capabilities

#### Shore Tank Calibration Services

- Above and Underground Storage Tanks
- Barge and Ship Compartments
- Bottom Zone Surveys
- Horizontal and Vertical Tanks
- Metered Calibration of Tank Bottoms
- Railcars
- Spheres
- Tank Strapping and Prover Calibration
- Tank Trucks and Trailers
- Ultrasonic Plate Thickness Determination
- Water Draw Services

#### Metering Calibration Services

- Calibration of Provers - Uni-Directional, Bi-Directional, Small Volume Provers (SVP)
- Calibration of Prover Tanks
- Calibration of Flow Meters

#### Instrument Calibration Services

- Mass Calibration
- Temperature Calibration
- Pressure Calibration



## OIL & PETROCHEMICALS Specialised Testing Services

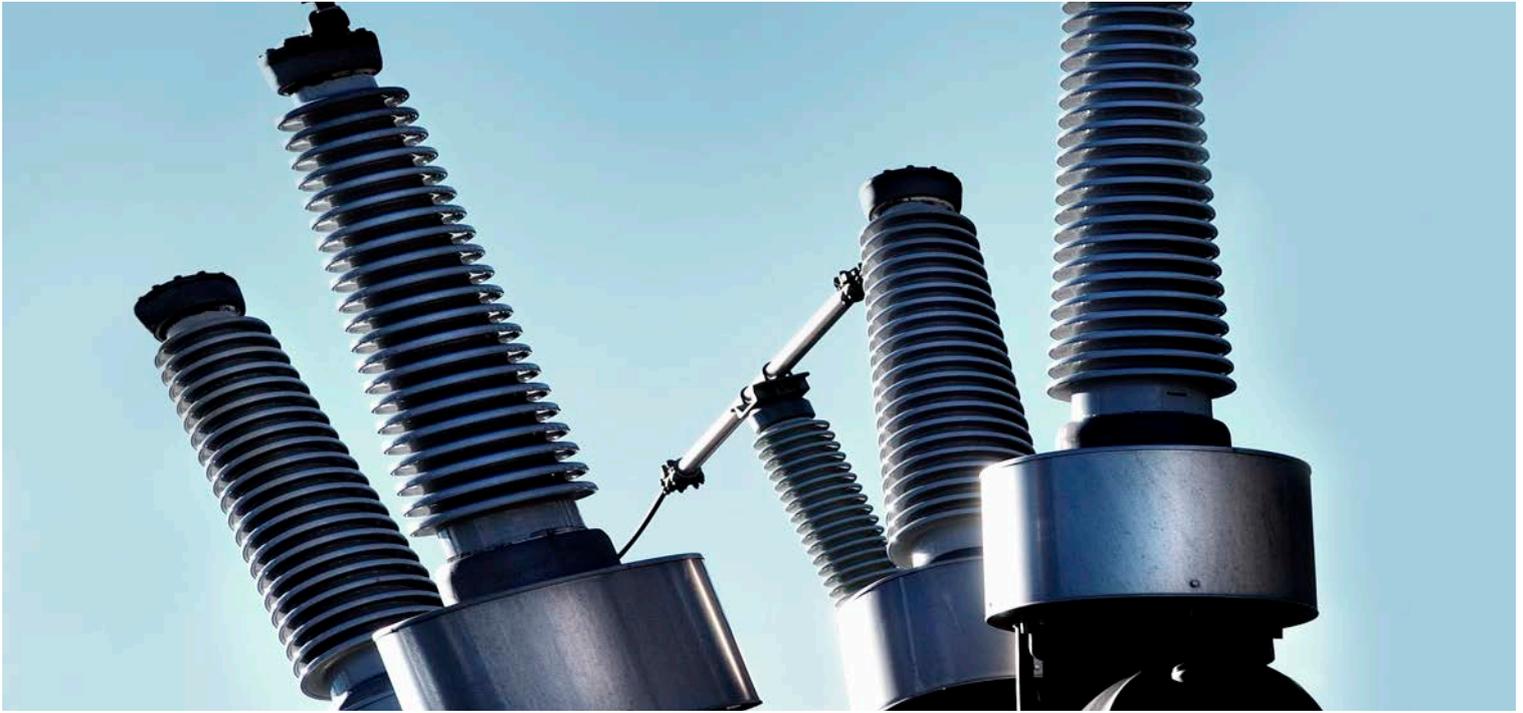
Bureau Veritas is able to offer global solutions with a full range of cargo surveying, inspection, testing, and logistic services for a large range of chemicals and specialised products. Together with our technical experts, we will be able to support you with the development of dedicated testing programmes and provide our solutions at the highest customer service levels.

Our expertise on analytical laboratory testing can be applied at a wide range of applications. Examples are: Fire Fighting Foam Testing, ELISA services and Refrigerants.



### Key Capabilities

- Health & Safety Assurance
- Litigation Services
- Material Certification
- MSDS Data Provision
- Product Development Support
- Quality Assurance & Control
- REACH Compliancy Services



## OIL & PETROCHEMICALS

# Transformer Oil Analysis

Bureau Veritas provides transformer oil analysis to power generating companies enabling them to monitor the health of their transformers. In order to assist our clients to take early remedial action before possibly dangerous and costly unit failure occurs, our laboratories are able to offer the following transformer oil analysis to determine:

- Functional parameters
- Stability characteristics
- Insulation performance
- Health, safety and environmental concerns

The quality of the analysis is as good as the sample drawn. We offer a complete portfolio of services for used transformer oil clients including sampling kits and on-site services, analytical testing, data analysis & reporting, and advisory and consulting services.

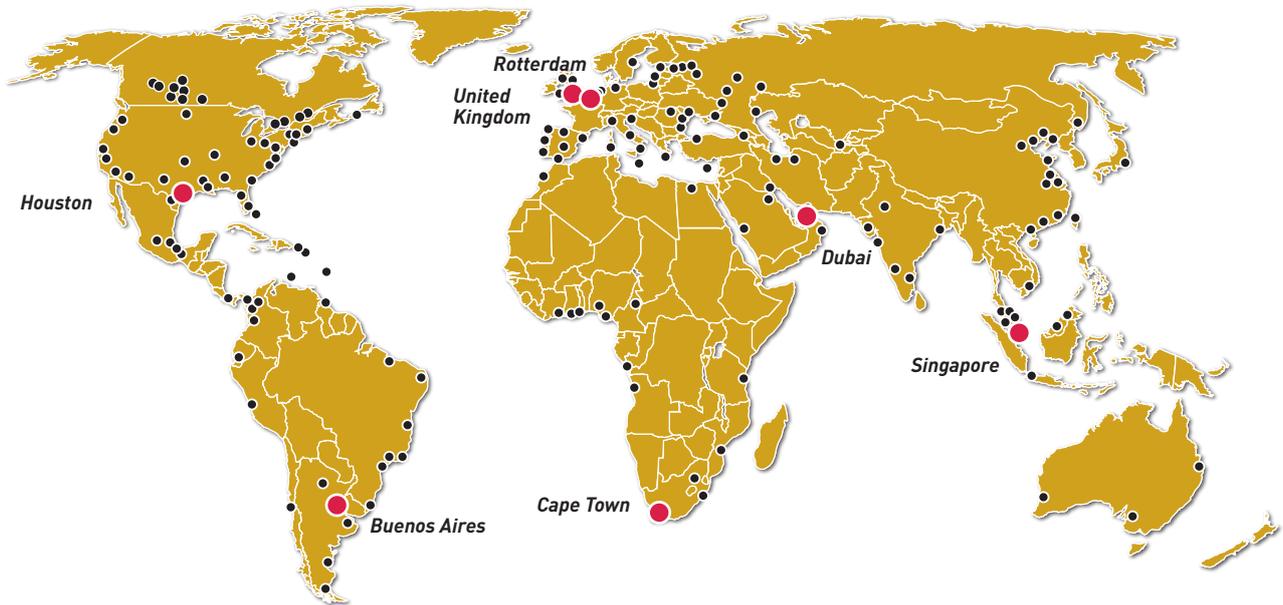


### Key Capabilities

- Acid Number / Neutralization Value
- Aniline Point
- Copper Corrosion
- Corrosive Sulphur
- Dibenzyl Disulphide (DBDS)
- Dielectric Breakdown Voltage (DBV)
- Dissolved Gas Analysis (DGA)
- Electrostatic Charging Tendency (ECT)
- Furanic Compounds / Furans
- Hydrocarbon Type
- Interfacial Tension
- Metal Passivator
- Moisture Content
- Oxidation Inhibitor
- Oxidation Stability
- Polychlorinated Biphenyls (PCB)
- Polycyclic Aromatics (PCA)
- Power / Dissipation Factor
- Resistivity

# BUREAU VERITAS

## Oil & Petrochemicals Global Network



- Regional Centres
- Oil & Petrochemical Locations

Contact our Global Sales Team using the numbers below:

United States	Tel: +1 800 248 5829	UAE	Tel: +971 4 899 8100
United Kingdom	Tel: +44 1376 536 800	Australia	Tel: +61 8 8416 5237
Benelux	Tel: +31 10 472 04 22	South Africa	Tel: +27 21 425 1800
Singapore	Tel: +65 6866 3019	Argentina	Tel: +54 11 4124 1200



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VERITAS**